

Standardized Percentile Curves of Body-Mass Index for Children and Adolescents

The data collected in the First National Health and Nutrition Examination Survey (NHANES I) from 1971 to 1974 were used to construct centile curves for body-mass index (BMI, kg/m^2) for white US boys and girls (ages 1 to 19 years). The raw means for each age were smoothed by quadratics fitted in 2 sections (males, 1 to 11 years and 8 to 19 years; females, 1 to 13 years and 6 to 19 years) and by splicing the 2 sections together (males at 10 years and females at 7 years).

The curves for BMI, by percentiles, for males and females are reproduced in Figure 1. Percentile values in tabular form are presented in the article, and these values will be of importance to those investigators concerned with relating BMI to other growth characteristics.

The authors conclude that these curves may be used to monitor the development of obesity as well as changes in BMI associated with treatment of obesity in childhood and adolescence. The pattern of BMI has been shown to be a predictor of long-term obesity in childhood and to predict morbidity and mortality in adulthood. Therefore, it is recommended that clinicians routinely measure height and weight and monitor BMI in children and adolescents. BMI curves should be developed for other racial groups as well. Further studies also are needed to define appropriate BMI cutoff points to more precisely define obesity in childhood and adolescence.

Hammer LD, Kraemer HC, Wilson DM, et al. *AJDC* 1991;145:259-263.

Editor's comment: *These curves provide useful cross-sectional standards for BMI for white US children. Admittedly, they relate to the 1970s and values today may be somewhat higher. The NHANES survey oversampled lower socioeconomic groups, but within-age analysis of the data did not show any significant socioeconomic differences. Thus, no adjustment for socioeconomic level was made. These are probably the best childhood population standards for BMI to date.*

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